Research Journal of Pharmaceutical, Biological and Chemical Sciences, 2015, vol.6, N4, pages 36-42

Buried soils in the floodplains of small rivers of Middle Volga

Kurbanova S., Prohorenko N.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Synchronization processes of soil formation and deposition of alluvium brought to the flood plain with affluent and flood waters are characteristic for floodplain soils. In the presence of natural terrains in the watersheds warpage is gradually processed in soil-forming process, layering of sediment disappears and good humus soil is formed in floodplain. In the floodplains of small rivers of different terrain zones of the Middle Volga the age of three buried hydromorphic soils is determined by radiocarbon method. This allowed to determine the periods of stabilization and strengthening of the accumulation of floodplain alluvial during the last seven thousand years. Formation of the lower buried soil at the depth of 3.5 m (age about 6800 years) coincides with Atlantic period - the Holocene climatic optimum. The development of the second layer of buried soil (with the age of three-four thousand years), which is located at a depth of 1.8 m from the day surface, is at the end of the Holocene subboreal period. The uppermost buried soil, the age of which is about 1200-2400 years was developed in Sub-Atlantic period of the Holocene. In the past 30-600 years, there was an intensive accumulation of alluvium and the formation of warpage on top of the buried soil, largely due to human activities. As a result of anthropogenic changes in basins of small rivers accumulation of material on the floodplain increased, and at the same time the rate of soil formation started to lag behind the rate of accumulation.

Keywords

Accumulation, Alluvium, Floodplain, Spore-pollen method, The radiocarbon method